

WE CLAIM:

1. In the method for associating source information with a substrate, which includes:
providing at least one latent marking agent containing an inorganic pigment that
fluoresces at a first emission wavelength in response to illumination at a first excitation
wavelength, and also fluoresces at a second emission wavelength in response to illumination at a
second excitation wavelength, wherein the first and second excitation wavelengths are unequal
and are outside of a visible spectrum, and the first and second emission wavelengths are unequal
and are within the visible spectrum;

affixing said at least one latent marking agent to said substrate; and

detecting said at least one latent marking agent for distinguishing said substrate from
other similar substrates,

a process for providing an ink with a viscosity for effective printing of the source
information, said process comprising mixing an effective amount of the inorganic pigment into
the ink, during manufacture of the ink.

2. The method as recited in claim 1, wherein the ink includes a leucodye and a Lewis
acid activator.

3. The method as recited in claim 2, wherein the ratio of the leucodye to the Lewis
acid activator is about 1:2.

4. The method as recited in claim 1, wherein from about 5-15% of the upconverting pigment is mixed with the Lewis acid activator, during the making of the ink.

5. The method as recited in claim 1, wherein said inorganic pigment is at least one member selected from the group consisting of chelated rare earth metals, yttria phosphors, and inorganic phosphors.

6. The method as recited in claim 1, wherein said ink is a flexographic ink.

7. In the method for associating source information with a substrate, which includes: providing at least one latent marking agent containing an inorganic pigment that fluoresces at a first emission wavelength in response to illumination at a first excitation wavelength, and also fluoresces at a second emission wavelength in response to illumination at a second excitation wavelength, wherein the first and second excitation wavelengths are unequal and are outside of a visible spectrum, and the first and second emission wavelengths are unequal and are within the visible spectrum;

affixing said at least one latent marking agent to said substrate; and

detecting said at least one latent marking agent for distinguishing said substrate from other similar substrates,

a process for providing a flexographic ink with a viscosity for effective printing of the source information, said process comprising mixing about 15% of an inorganic pigment into the ink, during the manufacture of the ink.

8. The method as recited in claim 1, wherein said ink displays differing visible responses before and after rubbing or scratching said substrate containing said ink, when said substrate is exposed to light with a wavelength of from about 915 to 990 nanometers.

9. The method as recited in claim 1, wherein said ink displays differing visible responses before and after rubbing or scratching said substrate containing said ink, when said substrate is exposed to light with a wavelength of from about 1550 to 1800 nanometers.

10. The method as recited in claim 1, wherein the leucodye determines the change in visible response.

10058546-012802